UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553,424	10/18/2005	Masashi Tamura	1163-0536PUS1	1484

2292   7590   03/11/2009
BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER
NEWMAN, MICHAEL A

ART UNIT	PAPER NUMBER
2624	

NOTIFICATION DATE	DELIVERY MODE
03/11/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Application Number: 10/553,424
Filing Date: October 18, 2005
Appellant(s): TAMURA ET AL.

D. Richard Anderson
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 12/10/2008 appealing from the Office action

mailed 03/24/2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,200,841	Kotaki et al.	04/06/1993
7,023,487	Adams	04/04/2006

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

- Claims 5, 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Kotaki et al. (U.S. Patent No. 5,200,841) in view of Adams (U.S. Patent No. 7,023,487).

Hereinafter referred to as Kotaki and Adams respectively.

-        Regarding claim 5, Kotaki teaches an image processing method

comprising: a feature value calculation step of calculating feature values of micro

regions in a specified region having a pixel of interest at a center, from pickup

results of an image pickup device that has a color filter with a particular color at

each of pixels arrayed two-dimensionally

(Kotaki Col. 5 lines 6 – 12, with reference to Fig. 1, teaches that the analog

video signal output from the camera (1) is input to an A/D converter (2) to

generate/calculate multi-value digital image data. Col. 10 lines 34 – 45, with

reference to Fig. 10, teaches that the multi-value digital image data

calculated by the A/D converter is in a window having a 'desired pixel C'3'

at the center. Finally, Col. 11 lines 9 – 10, teaches that the camera contains

a CCD image sensor, which is known to detect colors at each of its two-

dimensionally arranged pixel locations);

a binarization step of binarizing the feature values of the micro regions calculated

by the feature value calculation step

(Kotaki Col. 9 lines 60 – 67 and Col. 10 lines 62 – 67 teach that the multi-value digital image data having a desired pixel data, C'3, at the center is binarized);

a contour detection step of detecting a contour using the feature values binarized by the binarization step

(Kotaki Col. 2 lines 11 – 19 and Col. 5 lines 26 – 32).

However, **Kotaki fails to teach** an image signal value correction step of correcting an image signal value of the pixel of interest using image signal values of a plurality of pixels including the pixel of interest in a same direction as the contour detected by the contour detection step. **Pertaining to the same field of endeavor, Adams teaches a deinterlacer system that detects the presence and orientation of edges and calculates image pixel values based on the detected edges. Specifically, Adams teaches carrying out interpolation from source image pixels located along the detected edge orientation (Adams Col. 3 lines 4 – 7). <u>Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the edge detection result of Kotaki to carryout interpolation of the pixel of interest based on the pixels along the detected edge, as taught by Adams, in order to avoid jagged or objectionable looking artifacts (Adams Col. 1 lines 56 – 59).</u>**

-        Regarding claim 6, Kotaki as modified by Adams with regard to the

independent claim 5 further teaches that the image signal value correction step

corrects the image signal value of the pixel of interest by carrying out weighted

addition of the image signal values of the plurality of pixels in the same direction

as the contour **(Adams Col. 16 lines 10 – 12 and lines 27 – 28 – See Fig. 9A)**.

-        Regarding claim 7, Kotaki further teaches the image processing method

according to claim 5, wherein the contour detection step detects the contour by

carrying out pattern matching of distribution of the feature values in the specified

region binarized by the binarization step with preset binary distribution **(Kotaki**

Col. 2 lines 11 – 19, Col. 5 lines 26 – 32 and Col. 6 lines 47 – 53 – see Figs.

3A to 3D).

(10) Response to Argument

Arguments Regarding the Independent claim 5:

Arguments contained in section VII of the Appeal Brief filed on December 10th,

2008, are directed to the following limitations recited in the independent claim:

[A] feature value calculation step of calculating feature values of micro regions in

a specified region having a pixel of interest at a center, from pickup results of an

image pickup device ...

... [and] a binarization step of binarizing the feature values of the micro regions

calculated by the feature value calculation step[.]

Summary of Positions:

In general, Appellant submits that although Kotaki teaches calculating a mean value and a threshold value, both of which may be viewed as the calculated feature values in the claim language, Kotaki does not teach binarizing either of these calculated feature values themselves, but rather uses the mean value and the threshold value to binarize the pixel value of a pixel of interest. Thus, Kotaki does not teach the aforementioned limitations (appeal brief, pg 6).

- The Examiner agrees with Appellant's understanding of the teachings of Kotaki. However, the Examiner *respectfully* disagrees with Appellant's assertion, upon which Appellant's entire argument is based on, that only the mean and threshold values, taught by Kotaki, can be reasonably interpreted as the "feature values" calculated "from pickup results of an image pick up device", as required by the claim language. It is the Examiner's position that the multi-value digital image data, calculated by the A/D (analog-to-digital) converter from the analog video signal output from the camera, can be reasonably interpreted as the calculated feature values in the claim language. A more detailed reasoning in response to Appellant's arguments follows.

Detailed Response:

In pages 6 and 7 of the Appeal Brief, Appellant submits that claim 5 requires "a feature value calculation step of calculating feature values of micro regions in a

specified region having a pixel of interest at a center", and "a binarization step of binarizing the feature values of the micro regions calculated by the feature value calculation step." Appellant submits that either the mean value or the threshold value calculated by Kotaki may be viewed as calculated feature values. However, Appellant notes, Kotaki does not teach binarizing these feature values but instead teaches binarizing the pixel values themselves. Appellant makes reference to one of the several interviews (April 17th, 2008) in which the appropriateness of the introduction of Atkinson (U.S. Patent No. 6,961,476), "Atkinson", in the Office Action mailed on March 24th, 2008, to teach a definition of the term 'feature value' in the 'Response to Arguments' but not as part of the rejection; was discussed. Appellant notes that the discussion resulted in the Examiner agreeing that Kotaki did not appear to teach feature values as specifically described by either Atkinson or Appellant's specification. Appellant further submits that such a definition, in the specification, controls the interpretation of the term as it is used in the claim, and that the claims should be interpreted in light of the specification.

- At the outset, the Examiner *respectfully* disagrees with Appellant's assertion
  that only the mean and threshold values can be interpreted as the calculated
  feature values. The multi-value digital image data, calculated by the A/D
  (analog-to-digital) converter from the analog video signal output from the
  camera, can be reasonably interpreted as the calculated feature values in the
  claim language. As correctly noted by Appellant, during the interview

conducted on April 17th, 2008 [Note: the interview summary shows the date as April 16th, 2008], the Examiner agreed that Kotaki does not appear to teach feature values as described by Appellant's specification (Specification page 11 lines 12 – 26). However, Appellant was advised that unless such a description of the feature values is explicitly included in the claim, Kotaki's multi-value digital image data can be reasonably interpreted as the claimed feature values. In other words, the Examiner did not concede that Kotaki failed to teach the claimed limitation. The Examiner is well aware that the claims are to be interpreted in light of the specification. Appellant is probably similarly aware; however, that limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In interpreting a term as broad as "feature value", one must look at the surrounding claim language for context. The language in claim 5 impresses only <u>two</u> attributes on a "feature value."

(a) That the feature value is of a micro region in a specified region having a pixel of interest at a center.

(b) That the feature value is calculated from pickup results of an image pickup device.

The next step involves answering the simple question: Does Kotaki's multi-value digital image data share these two attributes?

(1) Kotaki's multi-value digital image data is generated by the A/D converter

[calculated] (Kotaki Fig. 1 element 2) from the analog video signal which is

output from the camera [from pickup results of an image pickup device]

(Kotaki Fig. 1 element 2).

(2) Kotaki's multi-value digital image data is the value of each pixel [micro

region] which is in a window [specified region] having a 'desired pixel C'3' at

the center [pixel of interest at the center] (Col. 10 lines 34 – 45, with reference

to Fig. 10).

Clearly, the answer is yes, Kotaki's multi-value digital image data, which is

the value of each micro region in a specified region that has a pixel of interest

at a center, is calculated from pickup results of an image pickup device.

The final step is to determine whether the interpretation is *reasonable in light*

of the specification. The specification directs one to interpret feature values

as values related to image values representing pickup color signals picked up

by the image pickup device. Kotaki's multi-value digital image data does

relate to image values that represent signals captured by a camera. The

Examiner believes this is reasonable and generous interpretation of the term

"feature value".

In page 8 of the Appeal Brief, Appellant again disagrees that individual pixels,

pixel locations or individual pixel values are calculated feature values. Appellant

insists that the concept of a single pixel itself inherently being a "calculated

feature value" is inconsistent with the definition of a "feature value" provided by the specification.

- As stated above, although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. The determination of whether the interpretation is consistent with a *preferred* description of a term is not whether the interpretation is *exactly* what is in the specification, but rather whether the *claim language* could be reasonably interpreted in light of the context provided by the specification. Is Kotaki's multi-value digital image data calculated from and describing data captured by a camera? Yes. One must question why, if Appellant is so insistent on limiting the interpretation of the claimed term 'feature value', to the description in the specification, is there such an equally immovable reluctance to simply recite the description in the claim?

In pages 8 and 9 of the Appeal Brief, Appellant submits that binarizing feature values is different from binarizing pixels. Specifically, that although the binarization of pixels will result in changes to some of the features of the image, the binarization does not require or imply that features comprised of those pixels, and therefore the feature values associated with those features are also similarly binarized. Appellant thus submits that the process of binarizing calculated feature values to allow for adjustment of individual pixel values, as claimed, is extremely different from the pixel binarization process taught by Kotaki.

- As discussed *ad nauseam* above, Kotaki's multi-value image data has been reasonably interpreted as the feature values. As correctly noted by Appellant, Kotaki teaches binarizing the multi-value image data, such that Kotaki does teach binarizing feature values as required by the claim language. Kotaki further teaches detecting edges using the binarized data, but does not appear to teach correcting the detected edges. Adams was introduced to teach such a limitation under 35 U.S.C. 103.

In pages 9 and 10 of the appeal brief, Appellant submits no further arguments regarding the rejections under 35 U.S.C. 103 of the dependent claims 6 and 7.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

Conclusion

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Michael A. Newman

/M. A. N./

Examiner, Art Unit 2624

Conferees:

/Matthew C Bella/

Supervisory Patent Examiner, Art Unit 2624

Samir A. Ahmed

/Samir A. Ahmed/

Supervisory Patent Examiner, Art Unit 2624